OFFICE OF THE COMMISSIONER FOR AQUACULTURE DEVELOPMENT

"TOWARD AN APPROPRIATE FEDERAL ROLE IN AQUACULTURE"

Results of the NEWFOUNDLAND Stakeholder Workshops

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This document is written in the language used at the workshop

Office of the Commissioner for Aquaculture Development

Canada

TOWARD AN APPROPRIATE FEDERAL ROLE IN AQUACULTURE
OFFICE OF THE COMMISSIONER FOR AQUACULTURE DEVELOPMENT
Report on the Regional Stakeholder Workshops
NEWFOUNDLAND – July 3 & 4, 2002

The Office of the Commissioner for Aquaculture Development (OCAD) has been directed by the Minister of Fisheries and Oceans to focus efforts upon measures that will lead to full implementation of the 1995 Federal Aquaculture Development Strategy. A key component of this mandate is the creation of a consolidated long-term strategic vision for aquaculture development in Canada and defining a renewed federal role to implement this vision.

Within this context, OCAD organized eleven regional workshops with industry, government and other stakeholders to solicit the views of those groups most directly involved with aquaculture development in Canada. In each region (excepting the Prairie meeting[1]), sessions were organized separately with (1) industry and other stakeholders and (2) government representatives. As a result of this exercise, perspectives on the fundamental elements for successful development of the aquaculture sector in Canada have been compiled, including identification of those groups responsible for delivering each of the fundamental elements. An **element** is defined as a high-level component of the vision that, ultimately, will require strategic focus for further implementation.

At each workshop, an identical process was followed, as outlined below:

- Presentation of background information pertaining to OCAD's mandate
- Consideration of the "Vision Question"
- Brainstorming
- Identification of fundamental elements
- Prioritization exercises
  - Gap Analysis
  - Relational Analysis
  - Resource Allocation

The "Vision Question"

It is 2017 and Canada has grown to realize its potential in aquaculture, a locus of investment that is well-regarded as an environmentally sustainable source of wholesome seafood that provides employment for coastal and rural communities and economic benefits to the Canadian economy in a business climate that is free of public criticism. How did we get to this point?

This report provides interim results from the Newfoundland regional workshops, held on July 3 and 4, 2002. Annex III includes the list of participants to the workshop, and annex I and II provide a transcription of the elements identified in these sessions. These results reflect the views and opinions of the individuals who participated in the sessions; however, they do not necessarily reflect the perspective of any organizations or associations to which these individuals belong. An analysis of the overall exercise will be available shortly through OCAD's website: http://ocad-bcda.gc.ca

[1] The Prairie workshop consisted of one session between aquaculture industry representatives, other stakeholders and the federal and provincial government representatives.

PRELIMINARY FINDINGS

1. IDENTIFICATION OF ELEMENTS & GAP ANALYSIS

Ten (10) elements were identified in both the Industry and other stakeholders' workshop, and the government representatives' workshop. These elements, and their definition, are presented in Tables 1 and 2. For each element, a score is presented to reflect the collective view of the workshop delegates with respect to the current level of progress in relation to its full implementation. The percentage scores reflect the following scale: 0% - No Implementation; 25% - Falling Behind with Implementation; 50% - Neither Gaining nor Falling Behind; 75% - Moving Forward with Implementation; 100% - Full Implementation.

Table 1: Elements & Gap Analysis - Industry & Other Stakeholders

Finance 37%	• Secure and attractive investment climate.
Regulatory 49%	• Appropriate and harmonized enabling regulatory framework that is transparent and accountable, and which supports key issues such as site access, property rights, food safety, and productivity.
Marketing & Trade 34%	• Effective initiatives to promote consumption and to enhance consumer confidence, product development and secure and protect international trade.
Environm. Sust. 62%	• Initiatives to improve environmental sustainability.

Table 2: Elements & Gap Analysis – Governments

Investment 37%	• Attractive investment climate for aquaculture built around venture capital, government financing programs, tax incentives and infrastructure development.
Legislative / Policy / Enforcement 55%	• Harmonized and balanced development and regulatory approach built around timely and effective response, conflict resolution, and industry compliance.
Marketing 32%	• Promotion and distribution of quality products in domestic and international markets; development of market information systems; and full awareness of trade sensitivities.
Environm. Sust. 49%	• Development and implementation of government-approved and industry-lead Environmental Codes of Practice based on adaptive management principles.

Communications 29%	• Internal communications to promote coordination and cooperation within the sector (all players); External initiatives to enhance consumer / public awareness & acceptance of aquaculture; & communicating to groups of special interest to aquaculture (Banks, etc.).	Communications 37%	• Public and stakeholder awareness and education of the developmental and regulatory frameworks for aquaculture; industry-lead Advocacy Group; and objective government attitude and culture re aquaculture.
R&D /Techn. Enhancement 50%	• Effective R&D strategy to coordinate the development, acquisition and communication of technology.	R&D 57%	• Coordinated strategic approach to R&D in support of productivity and sustainability with more emphasis on development.
Governance 17%	• Clarification of jurisdiction and appropriate delineation of roles between the two levels of government and other stakeholders.	ICZM 47%	• Development and implementation of an effective ICZM system.
Industry Practices 60%	• Initiatives targeted towards increased productivity and sustainability.	Industry Org. 37%	• Effective industry organizations; professionalization of workers and management in the industry; and long-term funding.
HR Develop. 48%	• Create, through an HR strategy, awareness and education / training opportunities for development of effective workforce.	Education & knowledge 58%	• Human resource development through training and professionalization; and extension services to advance industry knowledge.
Industrial Support 34%	• Industrial safety net and infrastructure	Product Safety / Quality Control 55%	• Product traceability from farm to market; quality management systems; and on-farm safety programs (HACCP, Q&P).

2. RELATIONAL ANALYSIS (Drivers & Dependents).

This exercise served to define a cause-and-effect relationship between strategic elements. "Drivers" are those elements which, if implemented, will have an effect upon the implementation of other "dependent" elements. A very high score means that the element is a driver (DR), while a very low score means that it is dependent (DP). This does not mean that a dependent element is not important. It does, however, suggest that if two elements are identified as having a similar priority, it would be wise to consider the leveraged influence of the driver on other elements. Table 3 presents the results from the relational analysis exercise. No data was collected from the industry and other stakeholders' workshop.

Table 3: Relational Analysis - Governments

ELEMENT	RANK	ELEMENT	RANK
Finance	3 DP	Marketing	2 DP
Industrial Support	2 DP	Industry Organization	10 DR
Regulatory	10 DR	Legislative / Policy / Enforc.	9 DR
Marketing & Trade	7	Prod. Safety / Quality Ctrl.	8 DR
Environmental Sustainability	4	Investment	6
Industry Practices	1 DP	R&D	5
Communications	5	Communications	4
R&D / Technology Transfer	8 DR	Education & Knowledge	1 DP
Governance	9 DR	Environm. Sustainability	7
HR Development	6	ICZM	3 DP

3. RESOURCE ALLOCATION

In the resource allocation exercise, each delegate was provided with approximately 50% more resources than the number of elements. For example, if 10 elements were identified, each delegate was provided with 15 resources. The resources represented public sector resources including tax dollars, civil servants and time. Delegates were asked to allocate their resources to those elements that they deemed to be most requiring attention. All of the resources could be allocated to a single element or they could be spread several or all elements. Results, expressed as a percentage of the total number of resources allocated for each element, are presented in Tables 4 and 5.

Table 4: Prioritization – Industry & Other Stakeholders

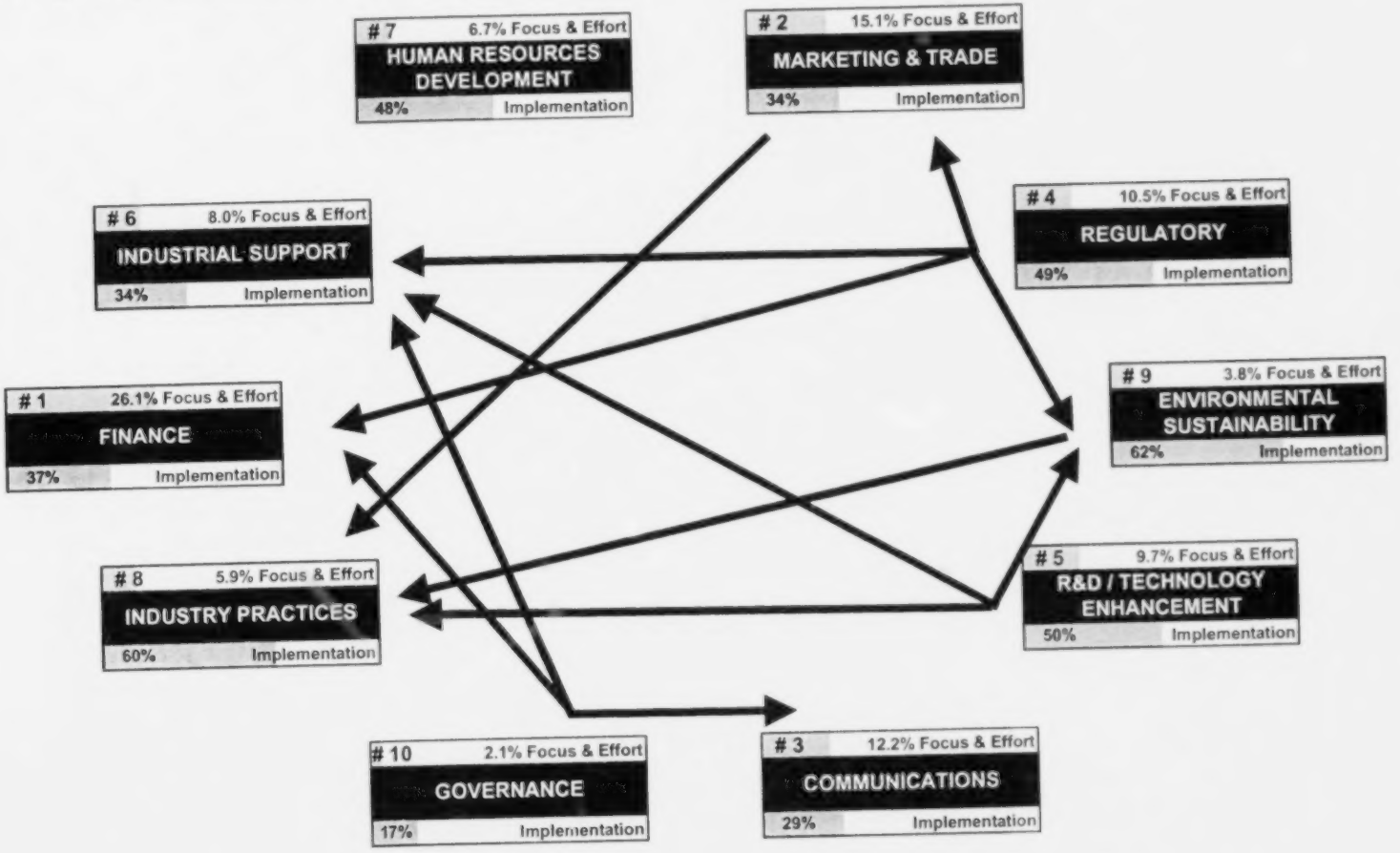
ELEMENT	SCORE %
1. Finance	26.1
2. Marketing & Trade	15.1
3. Communications	12.2
4. Regulatory	10.5
5. R&D/Tech. Enhancement	9.7
6. Industrial Support	8
7. HR Development	6.7
8. Industry Practices	5.9
9. Environmental Sust.	3.8
10. Governance	2.1
TOTAL	100%

Table 5: Prioritization - Governments

ELEMENT	SCORE %
1. Investment	18.7
2. Environmental Sustainability	13.7
3. R&D	12.3
4. Legislative/Policy/Enforcement	9.9
5. ICZM	9.2
6. Education & knowledge	8.8
7. Marketing	8.5
8. Product Safety/ Quality Control	6.7
9. Communications	6.7
10. Industry Organization	5.6
TOTAL	100%

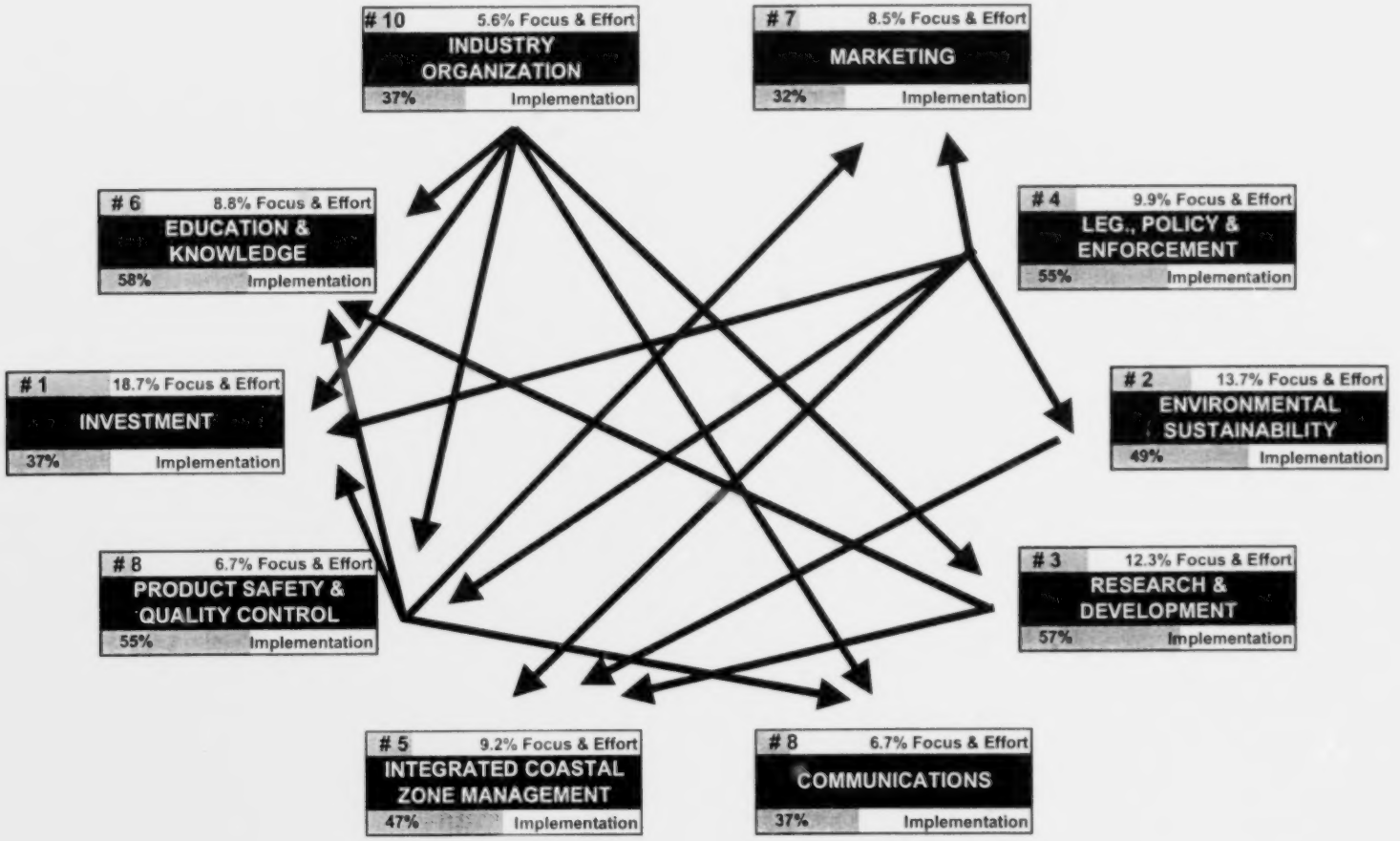
Summary Table 1.

This table is a graphic representation of the ten elements identified in the Newfoundland industry and other stakeholders meeting, along with the results of each exercise (gaps analysis, relational analysis, and resource allocation).



Summary Table 2.

This table is a graphic representation of the ten elements identified in the Newfoundland government stakeholders meeting, along with the results of each exercise (gaps analysis, relational analysis, and resource allocation).



ANNEX I. REGIONAL AQUACULTURE STAKEHOLDER WORKSHOPS
INDUSTRY AND OTHER STAKEHOLDERS' PERSPECTIVES
Newfoundland (Grand Falls, NF) - July 3, 2002

The following represents the comments of individual participants attending at the workshop. It does not necessarily reflect consensus or agreement among the participants.

ELEMENTS & INITIATIVES (Transcription from Post-It notes)

1. **FINANCE** – Secure and attractive investment climate

Federal Initiatives
The federal government has:

- Supported cost -reduction strategies. (i.e. funding programs to allow for up-front food purchase to eliminate compounded interest charges and create a purchasing discount).
- Given security of investment.
- Tax credit programs / assistance.
- CCRA supports aquaculture initiatives.
- Developed federal financing programs specifically for aquaculture.
- A specific investment program: Federal / provincial refundable investment tax credit for aquaculture development, funded from non-refundable resource royalties: 35% federal 15% provincial.
- Provided tax Incentives: investment, R&D, employees.
- Provided investment tax incentives for development, limited interest-free loans.

Provincial Initiatives
The provincial government has:

- Resource sectors to contribute to Aquaculture Development Fund (esp. nonrefundable resources) i.e. tax incentives, royalties resume without claw back.
- Debt relief write-off for existing companies.
- Funding programs to support expansion of existing farms.
- Provided tax incentives: investment, R&D, employees.
- Tax credit regimes.

Other Initiatives
Other groups have:

- Inventory funding: product integration of seasonal producers.
- Established an effective working capital fund.
- Established development funds (as opposed to resources).
- Demonstrated commercial viability of farming alternative species (R&D etc.).
- Invest "venture" capital to emerging species.
- Provided-compensation for lost opportunities (viz. to fisheries).
- Established industry overlap limited to 51% domestic and 49% foreign.
- Royalties from developing natural resources going back into renewable resources, i.e. aquaculture.
- Investment dollars to financial assistance (massive infrastructure dollars).

2. **INDUSTRIAL SUPPORT** – Industrial safety net and infrastructure.

Federal Initiatives
The federal government has:

- Crop Insurance Program.
- Food Safety Programs NACCP.
- A disaster fund.

- Infrastructure development. R&D facilities, transportation, wharves.
- Enhanced aquaculture to its fullest.
- Transportation 'subsidies'.
- Provided infrastructure. Wharves and associated structures (i.e. storage), roads, communications.
- Applied technology programs to aquaculture (specific).

Provincial Initiatives
The provincial government has:
- Provided fish health / Vet services.
- Infrastructure development: roads, airlines, storage capacity, value added facilities, sewage treatments, cheap source of power for manufacturing.

Industry Initiatives
The industry has:
- National Aquatic Animal Health Program (NAAHP) (Shared 20-40-40?).
- 'Industrial heartland' in the province i.e. manufacturing of gear-flotation, feed. Cluster of industries for self-sufficiency.
- Integrated capture and culture fisheries (Aboriginal).
- Cost-effectiveness of inputs i.e. feed, etc.
- Targeted profitable species.
- Compensated for lost opportunities, i.e. fisheries (shared).

3. **REGULATORY** – Appropriate and harmonized enabling regulatory framework that is transparent and accountable, and which supports key issues such as site access, property rights, food safety, and productivity.

Federal Initiatives
The federal government has:
- Provided access to therapeutants.
- Established integrated management plan (zoning) for multi-users (living document).
- Compliance monitoring for food safety e.g. HACCP.
- Established management zones to minimize conflict.
- CFIA assumed total responsibility certificates, import export rights.
- Relaxed rules on strain importation.
- Separated 'policy' from 'operations'.
- Patents.
- Established federal 'champion' for aquaculture e.g. Dept. Minister of Aquaculture.
- Developed standards for site-marking maintenance same all across country and across sectors including commercial fishery.
- Dept. of Aquaculture and supporting regulatory environment.
- Harmonized federal and provincial regulatory framework: licensing, food safety, and compliance.
- Given access to best sites. Husbandry – best management practices. Federal / provincial streamlined system for site approval, better communication somebody accountable for other agencies' response in timely manner.
- State of the art monitoring and water quality, federal provincial and industry.

Provincial Initiatives
The provincial government has:
- Enabled site access.
- Reduced and more effective government bureaucracy.
- Established integrated management plan (zoning) for multi-users (living document).
- Provided security of licenses / continuity of licenses.
- Food safety.
- Safety OH&S.

- Sites as 'Industrial Private Properties'.
- Access to clean sites: environmental issues (i.e. raw sewage closes shellfish sites – municipal affairs / environment), industrial pollution.
- Lands issues stop illegal cabins near sites, enforced sanitary regulations, regulated municipal dumping.
- Harmonized federal and provincial regulatory framework: licensing, food safety, and compliance.
- Given access to best sites. Husbandry – best management practices. Federal / provincial streamlined system for site approval, better communication somebody accountable for other agencies' response in timely manner.
- State of the art monitoring and water quality, federal provincial and industry.

Industry Initiatives
The industry has:
- Developed on-farm HACCP.
- Established industry driven quality standards (e.g. associations).
- Strong industry voice.
- Site access.
- State of the art monitoring and water quality, federal provincial and industry.

Other Initiatives
Other groups have:
- Removed barriers to aquaculture site acquisition.
- Property rights to aquaculture sites.

4. MARKETING AND TRADE – Effective initiatives to promote consumption and to enhance consumer confidence, product development and secure and protect international trade.

Federal Initiatives
The federal government has:
- Trade WARS tariffs. Internation dumping laws.
- Federal food, food safety.
- Labeling and traceability.
- A federally sponsored advertising campaign on fish products.
- Enhanced domestic and international trade.
- Marketing trade missions.
- Consumption marketing, appeal campaign (goal domestic consumption) (i.e. 'Eggs Grade A Goodness") i.e. Milk i.e. Pork. Benefits of eating fish, quality of farmed production.
- Developed and implemented marketing support programs for industry.
- Provided marketing incentives, promotional tax relief.
- A 'Canada Inspected' seal.
- Integrated marketing strategies.

Provincial initiatives
The provincial government has:
- Integrated marketing strategies.

Industry Initiatives
The industry has:
- Food Safety.
- Traceability.
- Become a leader in aquaculture technology.
- Marketing: promotional allowance, in-store demonstrations.
- Enhanced product quality and new product development.
- Established local marketing initiations.
- Integrated marketing strategies.

Other Initiatives

Other groups have:

- Independent monitoring of HACCP (outside group) i.e. auditing.

5. **ENVIRONMENTAL SUSTAINABILITY** – Initiatives to improve environmental sustainability.

Federal Initiatives

The federal government has:

- Sterile stock.
- Affluent water waste.
- Escapees.
- Transfers.

Provincial Initiatives

The provincial government has:

- Regularly inspected sites.

Industry Initiatives

The industry has:

- Canada developed alternate protein sources for finfish farming.
- Totally self-sufficient 2 billion dollar industry
- Ensured sustainability of resource while growing industry.
- Code of containment.
- Land-based aquaculture.

6. **INDUSTRY PRACTICES** – Initiatives targeted towards increased productivity and sustainability.

Industry Initiatives

The industry has:

- Regional product processing alliances.
- Cost-reduction in operations.
- Codes of practices.
- Economics of scale in production.
- Created demand for product.
- NAAHP (10 (I): 40 (P): 50(F)).

7. **COMMUNICATIONS** – Internal communications to promote coordination and cooperation within the sector (all players); External initiatives to enhance consumers / public awareness and acceptance of aquaculture; and communicating to groups of special interest to aquaculture (Banks, etc.).

Federal Initiatives

The federal government has:

- Educated and communicated to lenders regarding the industry (i.e. potential, value, business.)
- Created a database of lessons learned / knowledge and expertise already acquired.
- Encouraged partnership among stakeholders (harvesters, producers, processing, government, etc.).
- Real recognition of aquaculture as an important economic indicator.

Provincial Initiatives

The provincial government has:

- Raised public awareness / communications of industry merits.
- Encouraged partnerships among sectors (processing, harvest, producers, and government).

- Developed programs for communication with public: Public awareness of benefits of industry; Provincial co-ordination of awareness, not really contributes to market development but public support provides important spin-off benefits.

Industry Initiatives
The industry has:
- 100% communication.
- Encouraged partnerships among stakeholders (harvesters, producers, processing, government, etc.).
- Developed programs for communication with public: Public awareness of benefits of industry; Provincial co-ordination of awareness, not really contributes to market development but public support provides important spin-off benefits.
- Held multi-stakeholder resource discussions.

Other Initiatives
Other groups have:
- Worked out clarification of roles.
- Communicated environmental safeness of aquaculture process.
- Developed communication initiatives via public and other resources users.
- Increased communications (explain the facts to eradicate the myths) all parties. Industry 1: Provincial 2: Federal 3.
- Harmony among all coastal users.

8. R&D / TECHNOLOGY ENHANCEMENT – Effective R&D strategy to coordinate the development, acquisition and communication of technology.

Federal Initiatives
The federal government has:
- Developed federal assistance programs for research and development.
- Developed a technology transfer assistance program.
- R&D best strains. Supported development or procurement innovative technologies.
- Removed barriers (bureaucratic roadblocks) to access the funding: the federal SR+ED investment tax credits is an excellent source of support for R&D (private sector/preparatory) but is being thwarted by new tariff?

Industry Initiatives
The industry has:
- Coordinated R&D $$.
- Biotech initiatives.
- Expanded aquaculture technology to what we learn from other countries.

9. GOVERNANCE – Clarification of jurisdiction and appropriate delineation of roles between the two levels of government and other stakeholders.

Federal Initiatives
The federal government has:
- Effective Integrated Coastal Zone Management.
- Endorsed industry-developed code of practice.
- Looked at whole industry not just sea ranching.
- Separated federal department for aquaculture.
- Eliminated DFO and replaced it with integrated coastal zone management (locally run for local benefit).
- Reduced and more effective government / bureaucracy.
- Defined "aquaculture".

Provincial Initiatives

The provincial government has:

- Improved its procedure for conflict resolution (sites, etc.).

10. HR DEVELOPMENT – Create, through an HR strategy, awareness and education / training opportunities for development of effective workforce.

Federal Initiatives

The federal government has:

- Human resources strategy includes incentives for full participation in industry. Specifically for women. I.e. enhanced family care programs. Support.
- Interested youth in aquaculture as a career. Education starting in elementary school. Training, post-secondary. Staying in coastal areas, towns. Rearing families here, therefore sustainable communities.

Provincial Initiatives

The provincial government has:

- Qualified workforce (with industry partnerships).

Industry Initiatives

The industry has:

- A national HRD strategy (government cost-shared).
- Provided career opportunities – competitive wages, social benefits.
- Motivated its workforce.

Other Initiatives

Other groups have:

- Professionalized the industry through training programs similar to those of the fishing industry. Fish harvester programs, NAIA could become self-sufficient on this.
- Education / training programs for youth.

ANNEX II. REGIONAL AQUACULTURE STAKEHOLDER WORKSHOPS
GOVERNMENT DELEGATE PERSPECTIVES
Newfoundland (Grand Falls, NF) - July 4, 2002

The following represents the comments of individual participants attending at the workshop. It does not necessarily reflect consensus or agreement among the participants.

ELEMENTS & INITIATIVES (Transcription from Post-It notes)

1. **MARKETING** – Promotion and distribution of quality products in domestic and international markets; development of market information systems; and full awareness of trade sensitivities.

Federal Initiatives
The federal government has:

- Focused R&D on issues regarding the priority species for development.
- DFO recognized the information gap that exists, committed the resources to gather the information and made it available to stakeholders. Gaps include biophysical characteristics and impact on fish habitat.
- CFIA has removed artificial trade barriers by working with the importers to identify acceptable product standards.
- A national quality control marketing program, a 'tracking system'.
- Recognized and implemented need for marketing intelligence on ongoing basis.
- Negotiated tariff agreements.
- Facilitated international trade partnerships.

Provincial Initiatives
The provincial government has:

- Provided brand-marketing support.

Industry Initiatives
The industry has:

- Committed to financing a larger research and development effort (commitment to a percentage of annual sales, for example).
- Completed development of markets to keep pace with production increase in order to prevent loss of revenue from depressed prices due to increasing supply.
- Exploited Canada's leading reputation for food safety standards.
- Supported and also implemented marketing intelligence.
- Fully developed markets for its product.
- Consistently supplied a premium product.
- Developed brand recognition associated w/ quality focused on our market development (starting at home).
- Found ways to fully utilize aquaculture products (i.e. new markets).

2. **INDUSTRY ORGANIZATION** – Effective industry organizations; professionalization of workers and management in the industry; and long-term funding.

Federal Initiatives
The federal government has:

- Provided consistent, long-term (5 yr.) financial support to appropriate industry associations. Cost-shared between the Feds, Province and Industry.

Provincial Initiatives
The provincial government has:

- Supported the professionalization of the industry.

Industry Initiatives
The industry has:

- Professionalized, fully meeting its obligations.
- Committed to support industry associations and be actively involved.

Other Initiatives
Other groups have:

- Commercial / traditional fishers are entering into partnerships with the aquaculture sector.

3. **LEGISLATIVE / POLICY ENFORCEMENT** – Harmonized and balanced development and regulatory approach built around timely and effective response, conflict resolution, and industry compliance.

Federal Initiatives
The federal government has:

- An enforcement structure in place that is timely and effective.
- Clarified its role as a facilitator / regulator.
- 'Taken to heart' its enabling role (current slant on regulation).
- Developed processes to resolve conflicts between waterway users.
- Avoided inappropriate application of legislation.
- Appropriate flexible legislation. Relies on good industry practice and strives to resolve micro-management.
- Established an Aquaculture Directorate with strong development focus (Directorate is located in appropriate Dept., possibly Agriculture).
- Favorable tax regime.
- Established and confirmed it's regulatory requirements.

Provincial Initiatives
The provincial government has:

- Stayed away from harebrained get-rich-quick schemes.
- Favorable tax regime.
- Made regular monitoring and data reporting of conditions of site licenses.

Industry Initiatives
The industry has:

- Fully complied w / safety standards, NWPA.
- Provided adequate information to facilitate government regulatory review.

4. **QUALITY CONTROL / PRODUCT SAFETY** – Product traceability from farm to market; quality management systems; and on-farm safety programs (HACCP, Q&P).

Federal Initiatives
The federal government has:

- Developed and implemented acceptable product safety standards.

Industry Initiatives
The industry has:

- Adopted quality measurement.
- Established 'accounting program' for tracking product (egg to market).
- Developed a healthy salmon program to track additives (therapeutants, hormones).
- Voluntarily implemented and met product quality standards from the farm to the table. Meets or exceeds minimum regulatory standard.

5. **INVESTMENT** – Attractive investment climate for aquaculture built around venture capital, government financing programs, tax incentives and infrastructure development.

Federal Initiatives
The federal government has:

- Tax incentive programs aimed at investment.
- Departments such as FCC have undertaken an active role in Financing Aquaculture. Take further risk!
- Federal agriculture has implemented safety net programs for Aquaculture similar those for the traditional farming industry.
- Favorable tax regime.
- Federal funding agencies recognized the benefits of economics if made in production and that aquaculture is a knowledge-based industry.
- Invested in Infrastructure program to provide clean processed water and to maintain healthy growing environment.

Provincial Initiatives
The provincial government has:
- Provided tax incentives to encourage industry investment.
- Established programs to provide capital to industry.
- Favorable tax regime.
- Tax incentive programs aimed at investment.

Industry Initiatives
The industry has:
- Accessed venture capital sufficient to support industry development.
- Promoted opportunities in Canada to attract investment from international aquaculture companies.

6. R&D – Coordinated strategic approach to R&D in support of productivity and sustainability with more emphasis on development.

Federal Initiatives
The federal government has:
- Provided long term funding for research based on consolidated approach. Development is important aspect of R&D.
- Understanding quality measures of biophysical environment and development. Simple, cheap field measurement for water quality.

Provincial Initiatives
The provincial government has:
- Enlisted exterior services 'tech assistance'.
- Promoted diversification in ownership and products.
- Development and research funds have been allocated to species with greatest potential for marketability.
- Government and industry have jointly identified and funded initiatives to address knowledge deficiencies.
- Established a mechanism for automated data analysis and flagging mechanism to facilitate adaptive management.
- Provided long term support for extension activity/developmental service support (tech advice) Problem identification as a shared solution for industry.

Industry Initiatives
The industry has:
- Prioritized focus for R&D in consultation with federal and provincial governments.
- Seek out and apply 'BAT', Bent Tech.
- R&D program to identify new sites.

Other Initiatives
Other groups have:
- University technology transfers.

7. COMMUNICATIONS – Public and stakeholder awareness and education of the developmental and regulatory frameworks for aquaculture; industry-lead advocacy group; and objective government attitude and culture re aquaculture.

Federal Initiatives

The federal government has:

- Supported aquaculture applicants with positive feedback rather than giving lists of regulations.
- Recognized aquaculture as legitimate user of water.
- Provided information products that are useful to all marine partners to understand the aquaculture industry.
- Communicated its regulatory requirements.

Provincial Initiatives

The provincial government has:

- Implemented and maintained a web-based repository of information for public access to communicate objectivity regarding aquaculture, environment and fishing industry interactions.
- Expanded Aqua GIS to include database of all aquaculture siting variables important to site licensing and review of license application.

Industry Initiatives

The industry has:

- Promoted itself and educated public, 'Newfoundland grown'.
- Communicated code of practice approaches to public.
- The public views aquaculture firms as good corporate citizens.
- Educated the public on the benefits of aquaculture.
- Developed and funded an advocacy group.
- Consistently involved local communities informing them of changes.

Other Initiatives

Other groups have:

- Media promotes and educates public, 'criticize industry'.

8. EDUCATION & KNOWLEDGE – Human resource development through training and professionalization; and extension services to advance industry knowledge.

Federal Initiatives

The federal government has:

- Supported aquaculture applicants with positive feedback rather than giving lists of regulations.
- Recognized aquaculture as legitimate user of water.
- Provided information products that are useful to all marine partners to understanding the aquaculture industry.

Provincial Initiatives

The provincial government has:

- Professionalized industry.
- Established training and education programs for workers / technicians in addition to university level programs.

Industry Initiatives

The industry has:

- Professionalization of industry
- Established apprenticeship program for "workers".

9. ENVIRONMENTAL SUSTAINABILITY – Development and implementation of government-approved and industry-lead Environmental Codes of Practice based on adaptive management principles.

Federal Initiatives

The federal government has:

- Development database of all key biophysical characteristics of good sites.
- Assisted with code of practice for environmental sustainability.
- DFO helped industry develop codes of practice to minimize the impact of aquaculture fish on the wild stock.
- Applied adaptive management in response to monitoring program.

Provincial Initiatives

The provincial government has:

- Developed database of all key biophysical characteristics of good sites.
- Helped industry develop codes of practice and standards for aquaculture species.
- Participated in development of code of practice for environmental sustainability.

Industry Initiatives

The industry has:

- Implemented codes of practice to minimize effect of aquaculture fish on wild stocks.
- 'Kept its fish in the cages'.
- Monitoring of environmental issues is done by industry based on code of conduct. Federal and provincial governments, along with industry have worked to develop code and to jointly ensure adherence. Corrective actions have been incorporated into code.
- Self-compliance regime, 'stewardship'.
- Adopted a proactive approach 'In The Drivers Seat' Industry developed 'Code of Practice'.

10. ICZM – Development and implementation of an effective ICZM system.

Federal Initiatives

The federal government has:

- Conducted R&D to estimate / measure carrying capacity of sites (within sustainable levels). R&D fish health vaccines, pathogens, and therapeutants.
- Led and / or facilitated the development of integrated coastal zone management plans. Has classified coastlines for development.
- Developed a site characteristic database.
- DFO developed at least one policy with respect to its aquatic resources (wild fish, aquaculture, and recreational uses).
- Developed a system for classification of marine habitats.
- Supported and worked with provincial government for pre-approval for site license.

Provincial Initiatives

The provincial government has:

- Actively participated in integrated coastal zone management planning.
- Developed a site characteristic database.
- Provincial government has proactively reviewed and given pre-approval for site license to appropriate developers (similar to land lot development).
- Minimized conflict with other leisure users. It has a land use policy.

Industry Initiatives

The industry has:

- Actively participated in integrated coastal zone management planning.
- Understood its roles as a partner in the marine community.

Other Initiatives

Other groups have:

- Actively participated in ICZM.

ANNEX III. LIST OF PARTICIPANTS - NEWFOUNDLAND WORKSHOP

Industry and Other Stakeholders representatives

NAME	AFFILIATION
A. Job. Halfyard	Newfoundland Aquaculture Industry Association
Alvin Hodder	Newfoundland Aquaculture Industry Association
Chris Tuck	Emerald Zone Corporation
Cyr Couturier	Centre for Aquaculture and Seafood Development - Memorial University of NF
Danny Boyce	Aquaculture Research and Development Facility - Memorial University of NF
Garry Hartle	Newfoundland Aquaculture Industry Association
George Parsons	Newfoundland Salmonid Growers Association
Jamie LeRoux	South Coast Community Development Corporation
Jennifer Caines	Newfoundland Aquaculture Industry Association
Jim Beals	Highdon's Seafood
Joe Keating	Newfoundland Aquaculture Industry Association
Juan Roberts	Newfoundland Aquaculture Industry Association
Louis MacDonald	Newfoundland Aquaculture Industry Association
Lynette Carey	Newfoundland Aquaculture Industry Association
Mike Rose	Newfoundland Aquaculture Industry Association
Olonzo Bailey	Newfoundland Cod Growers Association
Ross Hinks	Miawpukek Mi'kamawey Mawi'omi First Nation - Fisheries
Tom Best	Newfoundland Cod Growers Association
Tracey Perry	Coast of Bays Corporation
Vernon Watkins	Newfoundland Salmonid Growers Association
Will Reid	Fish, Food and Allied Workers Union

Government Representatives

NAME	AFFILIATION
Brian T. Meaney	Newfoundland Department of Fisheries and Aquaculture
Chris Brown	National Research Council
Dan Shea	Department of Fisheries and Oceans
Dave Coffin	Department of Fisheries and Oceans
David Curtis	Environment Canada
Glenn Troke	Environment Canada
Jim Davis	Department of Fisheries and Oceans
Joan O'Brien	Department of Fisheries and Oceans
Joan Walsh	Human Resources Development Canada
John Collins	Department of Fisheries and Oceans
Marvin Barnes	Department of Fisheries and Oceans
Paul Lawrence	Canadian Food Inspection Agency
Paul Strickland	Atlantic Canada Opportunities Agency
Ray Walsh	Department of Fisheries and Oceans
Rodger Primmer	NF Government - Government Services and Land
Ron Dewling	Canadian Food Inspection Agency
Shawn Robinson	Newfoundland Department of Fisheries and Aquaculture
Steve Moyse	Newfoundland Department of Fisheries and Aquaculture
Todd Budgell	Newfoundland Department of Fisheries and Aquaculture
Vern Pepper	Department of Fisheries and Oceans
Walwin Blackmore	Mayor of Grand Falls, NF.